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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/981,174	10/17/2001	Zahid F. Mian	IEMC-0003	5641

23550 7590 08/21/2003

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EXAMINER

NGUYEN, MICHELLE P

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 08/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/981,174

Applicant(s)

MIAN ET AL.

Examiner

Michelle Nguyen

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-47 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-47 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 October 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other: _____

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the nineteen lines of light must be shown or the feature canceled from the claims (claim 8). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 5-7, 9-12, 14, 15, 17, 19-21, 23-28, 31-36, 38, 39-41 and 44-46 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,793,492 to Vanaki.

With regard to method claims 1-3, 5-7, 9-12, 14, 40 and 41, the structure of the wheel measurement systems discussed below with respect to claims 15, 17, 19-21, 23-28, 31-36, 38 and 39 renders the steps set forth in the method claims inherent to the operation of the wheel measurement system (see also Col. 6, line 20 to Col. 10, line 22, Col. 10, line 65 to Col. 11, line 9).

With regard to claims 15 and 33, Vanaki discloses a wheel measurement system for measuring an attribute of a wheel having a first side and a second side, the wheel measurement system comprising:

a light measuring system for obtaining wheel data with light, the light measuring system including:

a first light illumination device (laser 90) on the first side (gage side 24) of the wheel (wheel 20) for illuminating a first portion of the wheel with a first plurality of paths of light (see Figs. 4, 5); and

a first light sensing device (camera 96) for sensing a first reflection of the first plurality of paths of light from the wheel and generating the wheel data (see Col. 6, lines 33-9, Figs. 4, 5); and

a control unit (control system, not shown), in communication with the light measuring system, for measuring the attribute of the wheel from the wheel data (see Col. 9, line 1 to Col. 10, line 18).

With regard to claims 17 and 34, Vanaki teaches the wheel measurement system of claim 15, wherein the light measuring system further comprises:

a second light illumination device (laser 92) on the first side of the wheel for illuminating a second portion of the wheel with a second plurality of paths of light (see Figs. 4, 5); and

a second light sensing device (camera 98) for sensing a second reflection of the second plurality of paths of light from the wheel and generating wheel data (see Col. 6, 33-9, Figs. 4, 5).

With regard to claims 19 and 35, Vanaki teaches the wheel measurement system of claim 15, wherein the light measuring system further comprises:

- a second light illumination device (laser 94) on the second side (field side 22) of the wheel for illuminating a second portion of the wheel with a second plurality of paths of light (see Figs. 4, 5); and

- a second light sensing device (camera 100) for sensing a second reflection of the second plurality of paths of light from the wheel and generating wheel data (see Col. 7, lines 3-10, Figs. 4, 5).

With regard to claim 20, Vanaki teaches the wheel measurement system of claim 19, wherein a plurality of wheel attributes are measured (see Col. 6, lines 33-9, Col. 7, lines 3-10, Fig. 9).

With regard to claim 21, Vanaki teaches the wheel measurement system of claim 20, wherein the plurality of wheel attributes include a rim thickness, a flange thickness, a flange height, a wheel diameter and a wheel angle of attack (see Fig. 9).

With regard to claim 23, Vanaki teaches the wheel measurement system of claim 15, wherein the control unit includes:

- a local control unit for controlling the first light illumination device and the first light sensing device (see Col. 9, lines 3-23); and

- a system control unit, in communication with the local control unit, for calculating the attribute of the wheel (see Col. 9, line 24 to Col. 10, line 18).

With regard to claim 24, Vanaki teaches the wheel measurement system of claim 15, further comprising a wheel sensing system in communication with the control unit (see Col. 6, lines 6-19, Col. 9, lines 1-20).

With regard to claim 25, Vanaki teaches the wheel measurement system of claim 24, wherein the wheel sensing system includes a wheel presence system (sensor, not shown, and presence sensor pairs 102, 104, 106) for sensing a presence of the wheel; and wherein the wheel presence system is a known distance from the light measuring system (see Col. 6, lines 22-4, Col. 7, lines 48-58, Col. 9, lines 1-7).

With regard to claim 26, Vanaki teaches the wheel measurement system of claim 25, wherein the wheel presence system includes:

a first sensor (sensor 102) disposed near a path of the wheel (see Fig. 5);
and

a second sensor (sensor 104) disposed near the path of the wheel
wherein the second sensor is a known distance from the first sensor (see Col. 6, lines 22-4, Fig. 5).

With regard to claims 27 and 36, Vanaki teaches the wheel measurement system of claim 26, wherein the control unit determines a time (i.e. start time) that the wheel is in a range of the light measuring system (see Col 6, lines 20-32, Col. 7, lines 52-8).

With regard to claims 31 and 38, Vanaki teaches the wheel measurement system of claim 15, wherein the plurality of paths of light produces a plurality of substantially parallel lines of light (see Fig. 7).

With regard to claim 28, Vanaki teaches the wheel measurement system of claim 26, wherein the first sensor includes a magnetic sensor (inductive proximity sensor) and the second sensor includes a magnetic sensor (inductive proximity sensor) (see Col. 6, lines 1-4).

With regard to claims 32 and 39, Vanaki teaches the wheel measurement system of claim 31, wherein the plurality of substantially parallel lines of light illuminates the first portion of the wheel in a substantially radial direction (see Col. 7, lines 38-42).

With regard to claims 44-46, the structure of the wheel measurement system discussed above with respect to claims 15 and 24-27 renders the claimed computer program product inherent to the structure of the control unit (see also Col. 6, line 20 to Col. 10, line 18, Fig. 9).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,793,492 to Vanaki.

With regard to claim 4, Vanaki teaches the method of claim 3, wherein the wheel is a railway wheel, but does not teach the first and second sides to comprise field and gage sides, respectively, of the wheel (see Col. 3, line 27, Figs. 1, 2). Instead, Vanaki teaches the first and second sides to comprise gage and field sides (gage and field

sides 24, 22), respectively, of the wheel (see Fig. 5). However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Vanaki such that the first and second sides comprise field and gage sides, respectively, of the wheel for obtaining the desired wheel data.

With regard to claim 8, Vanaki does not teach the method of claim 6, wherein the plurality of substantially parallel lines of the light includes at least nineteen lines of light. Instead, Vanaki teaches the plurality of substantially parallel lines of light to include at least four lines of light (see Fig. 7). However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Vanaki such that the substantially parallel lines of light include nineteen lines of light for improving the accuracy of wheel data obtained.

6. Claims 13, 16, 18, 29-30, 37 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,793,492 to Vanaki as applied to claims 15, 17, 24, 33 and 44 above, respectively, and further in view of U.S. Patent No. 5,193,120 to Gamache et al.

With regard to method claim 13, the structure of the wheel measurement system discussed below with respect to claim 18 renders the steps set forth in the method claim inherent to the operation of the wheel measurement system (see also discussion above with respect to claims 1-3, 5-7, 9-12 and 14).

With regard to claim 16, Vanaki does not teach the wheel measurement system of claim 15, wherein a light sensing device includes a filter for filtering light. However, Gamache et al. teach a measurement system (profiling system 10), wherein a light

sensing device (camera 28) includes a filter (filter 32) for filtering light such that image contrast, and overall measurement accuracy are improved (see Col. 2, line 65 to Col. 3, line 2, Fig. 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add to the light sensing device of Vanaki the filter of Gamache et al. for improving overall measurement accuracy.

With regard to claims 18, 29-30 and 37, Vanaki does not teach the wheel measurement system of claims 17, 24 and 33, respectively, further including a wheel brightness system. However, Gamache et al. teach a measurement system comprising a surface brightness system for sensing a brightness of a surface, wherein a control unit adjusts the brightness of first and second light illumination devices based on the brightness of the surface, thereby improving the accuracy of measurements (see Col. 4, lines 1-9). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add to the wheel measurement system of Vanaki the surface brightness system of Gamache et al. for improving the accuracy of measurements.

With regard to claim 47, the structure of the wheel measurement system discussed above with respect to claim 18 renders the claimed computer program product inherent to the structure of the control unit (see also discussion above with respect to claims 44-46).

7. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,793,492 to Vanaki as applied to claim 21 above, and further in view of U.S. Patent No. 5,636,026 to Mian et al.

With regard to claim 22, Vanaki does not teach the wheel measurement system of claim 21, wherein the plurality of wheel attributes further includes a reference groove circle radius. However, Mian et al. teach the reference groove of a wheel to be a critical feature, which requires measurement (see Col. 5, lines 49-54). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to include in the plurality of attributes measured by the system of Vanaki the reference groove discussed by Mian et al. for obtaining a comprehensive profile.

8. Claims 42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,793,492 to Vanaki in view of U.S. Patent No. 5,193,120 to Gamache et al.

With regard to method claims 42 and 43, the structure of the wheel measurement systems discussed above with respect to claims 15, 17, 18, 24, 29, 30, 33 and 37 renders the steps set forth in the method claims inherent to the operation of the wheel measurement systems.

Conclusion

9. The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure: U.S. Patent No. 5,936,737 A to Naumann.

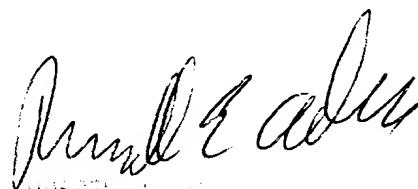
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michelle Nguyen whose telephone number is 703-305-2771. The examiner can normally be reached on M-F 8:30am-5:00pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Russ Adams can be reached on 703-308-2847. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4900.

mpn
August 14, 2003


RUSSELL ADAMS
SUPERVISORY FACETS, TECHNICAL
TECHNOLOGY CENTER